[14] Ilabaca PA. Pleuropericardial window without thoracotomy: the subxyphoid approach. J Tenn Med Assoc 1984;77:454—5.
[15] Manca G, Codecasa R, Valeri A, Braconi L, Giunti G, Tedone A, Perna AM, Stefàno P, Gensini G. Totally endoscopic subxiphoid pericardioscopy: early steps with a new surgical tool. Surg Endosc 2009;23:444—6.
[16] Ota T, Degani A, Zubiate B, Wolf A, Choset H, Schwartzman D, Zenati MA. Epicardial atrial ablation using a novel articulated robotic medical probe via a percutaneous subxiphoid approach. Innovations Phila Pa 2006;1:335—40.
[17] Watanabe G, Yamaguchi S, Tomiya S, Ohtake H. Awake subxyphoid minimally invasive direct coronary artery bypass grafting yielded minimum invasive cardiac surgery for high risk patients. Interact Cardiovasc Thorac Surg 2008;7:910—2.
[18] Ross Jr J. Transseptal left heart catheterization a 50-year odyssey. J Am Coll Cardiol 2008;51:2107—15.

Editorial comment

Why do it the easy way?

Keywords: Trans-apical; Aortic-valve implantation

With the event of trans-catheter aortic-valve implantation, the left-ventricular trans-apical access has gained renewed interest. While most studies report very few access-related complications, one recent study reports bleeding in 5% and formation of late pseudo-aneurysms in 6.6% of cases [1]. In rare cases (small ventricle, fragile tissue), rupture of the left-ventricular apex can occur and eventually lead to a fatal outcome [2]. It is therefore of interest to explore alternative direct cardiac access sites for aortic-valve implantation. The subxyphoid approach has been successfully used for single-port epicardial ablation of atrial fibrillation, and transabdominal, transdiaphragmatic endoscopic bypass grafting has been explored in an experimental setting [3].

In this issue, Liu et al. present a new method for subxyphoidal right-ventricular access for transseptal aortic-valve implantation [4]. While the authors have to be congratulated for their continuing and pioneering effort in developing devices to facilitate trans-apical aortic-valve implantation, this approach seems a little bit circumstantial. It is argued that opening the pleura can be avoided using a subxyphoidal approach and that general anesthesia may therefore no longer be needed. The requirement of general anesthesia for trans-apical aortic-valve implantation is continuously brought forward as a disadvantage when compared with the transfemoral access, which is now more often performed in local anesthesia. However, it has already been demonstrated that standard trans-apical aortic-valve implantation through the 5th or 6th left intercostal space can also be performed in the awake, spontaneously breathing patient using high epidural analgesia and despite pleural opening. However, there are other good reasons to favor general anesthesia in the setting of trans-catheter valve implantation. First, severe and life-threatening complications requiring cardiopulmonary bypass or cardiopulmonary resuscitation (CPR) can occur during the procedure at anytime. This can be managed more easily if the patient is already intubated. Second, uncontrolled motion of the patient during valve deployment can unarguably lead to valve dislocation, a problem that can easily be avoided if the patient is asleep. Not general anesthesia itself, but prolonged ventilation is disadvantageous for the patient. Trans-catheter valve implantation should therefore go in hand with a fast-track anesthesia concept, applying short-acting anesthetics and early extubation.

The creation of an iatrogenic ventricular septal defect (VSD) is required for the proposed access. While this was successfully treated with the application of an Amplatzer occluder, the reasonableness of means can be put to question. Percutaneous closure of a VSD is associated with a relatively high risk of both peri-interventional and potential long-term complications. These include, but are not limited to, incomplete closure with residual shunt, the risk of device embolisation and migration, thromboembolic complications (pulmonary and systemic), hemolysis, arrhythmias and the risks associated with the need for anticoagulation are added to the procedure. Transcatheter valve implantation is already expensive; the addition of devices to treat access-related collateral damage would further increase the economic burden.

For cases in whom standard aortic-valve replacement is truly not an option and neither the transfemoral, transsubclavian nor the trans-apical approach is feasible, a direct trans-aortic approach may be useful [5]. We must also accept that, even in 2010, some patients may be served best with no intervention at all.

References

[1] Wong DR, Ye J, Cheung A, Webb JG, Carere RG, Lichtenstein SV. Technical considerations to avoid pitfalls during transapical aortic valve implantation. J Thorac Cardiovasc Surg 2010;140(1):196—202.
[2] Al-Attar N, Ghodbane W, Himbert D, Rau C, Raffoul R, Messika-Zeitoun D, Brochet E, Vahanian A, Nataf P. Unexpected complications of transapical aortic valve implantation. Ann Thorac Surg 2009;88(July (1)):90—4.

[3] Falk V, Moll FH, Rosa DJ, Daunt D, Diegeler A, Walther T, Mohr FW. Transabdominal endoscopic computer-enhanced coronary artery bypass grafting. Ann Thorac Surg 1999;68:1555–7.
[4] Liu L, von Segesser LK. The transventricular-transseptal access to the aortic root: a new route for extrapleural transcatheter aortic stent valve implantation. Eur J Cardiothorac Surg 2011;39:635–41.
[5] Latsios G, Gerckens U, Grube E. Transaortic transcatheter aortic valve implantation: a novel approach for the truly ''no-access option'' patients. Catheter Cardiovasc Interv 2009;75:1129–36.

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